

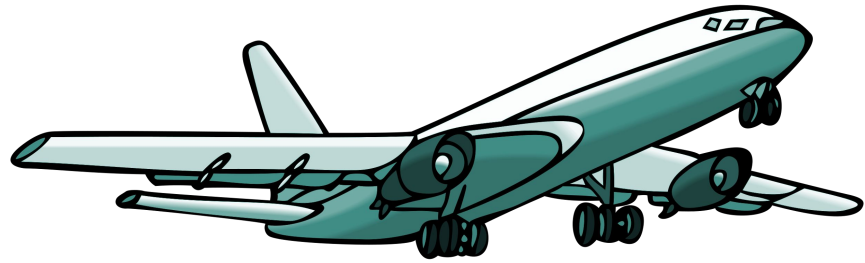
An illustration of an airport terminal. In the background, a light blue airplane is visible through a large window. To the right, a dark blue rectangular sign with horizontal lines hangs from the ceiling. In the foreground, four people are depicted. On the left, a man with a backpack and a red suitcase stands. Next to him, a woman in a red shirt holds a white document. In the center, a person in a purple shirt is partially visible. On the right, a man in an orange shirt and red pants pulls a black suitcase. A yellow luggage cart is positioned in front of the central figure. The overall style is flat and modern with a light blue and white color palette.

# **STAT 436 - Group #8**

# **Airline Delays**

**Kyle Zhao, Niharika Chunduru,**  
**Vaishnavi Borwankar, Peter Kryspin**

# Motivation



- Airlines are a multibillion dollar industry; any optimization is a significant profit
- Visualize data to predict delays so:
  - Airports can compare their flight traffic and subsequent delays
  - Airlines can better allocate resources based on which airports they depart from or arrive to
  - Customers can make informed decisions from reducing probability of a delay to reducing the number of people they come in contact with by choosing an airport with less flights depending on the day of the week

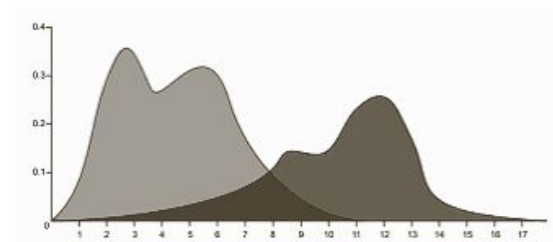
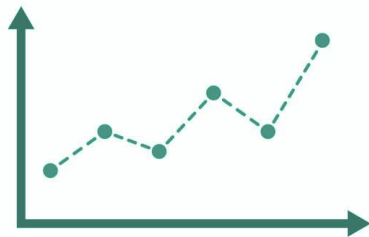
# Methods and Plots



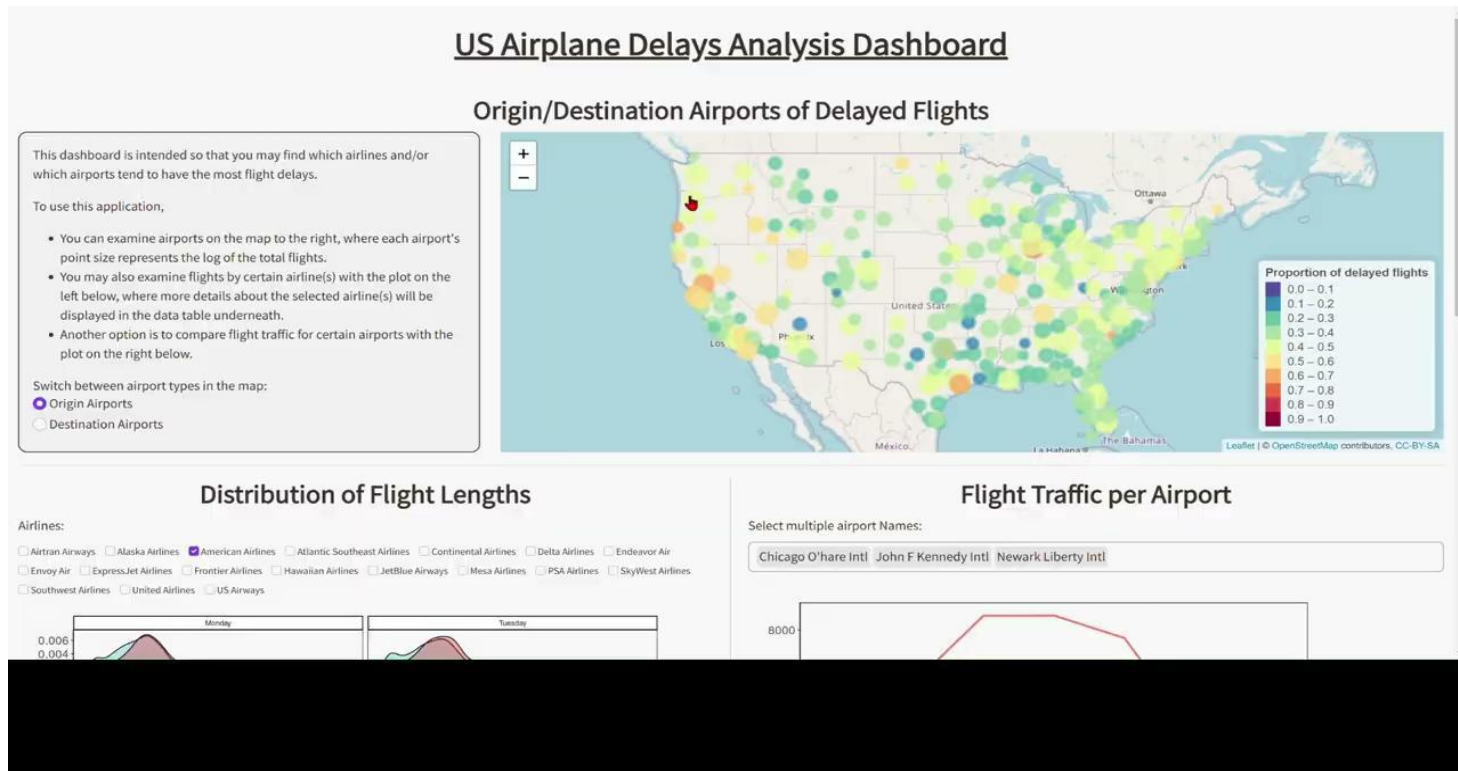
**Leaflet Map** - measures the proportion of delays based on origin/destination airport

**Density Plot** - compare distribution of flight delays based on the airline, flight length, and day of the week

**Line Plot** - defines the most popular days of the week for flights based on selected airport



# Visualization # 1: Airports of Delayed Flights



# Visualization #2: Flight Lengths and Delays by Airline



# Visualization #3: Flight Traffic Per Airport



# Observations and Takeaways

- There are many delays when it comes to destination airports compared to origin – possible solution is to update air traffic control to increase landing efficiency.
- In general, airlines with shorter flights have lower rates of delays
- Most airports experience larger numbers of flights on Wednesdays and Thursdays with a second smaller peak between Sunday and Monday

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**Link to Application: here**

— Link to code on GitHub: here —

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